

Claims:

1. A gait waveform feature extracting method comprising steps of:
specifying a one-step waveform from a portion of a digital signal, said digital signal corresponding to an electric field displacement formed on a body of a subject in accordance with a two-leg-walking movement of said subject, said specifying step including
 associating as an index of said one-step waveform a peak amplitude in
 a predetermined frequency band, said peak amplitude corresponding to a state
 where approximately a whole bottom surface of a first foot of said subject is in
 contact with a walking surface and a toe of a second foot of said subject is just
 after leaving the walking surface; and
extracting features of said one-step waveform after said one-step waveform is
specified in said specifying step.
2. The gait waveform feature extracting method according to Claim 1, wherein:
said predetermined frequency band is in an inclusive range of 6Hz through 10 Hz.
3. The gait waveform feature extracting method according to Claim 1, further
comprising:
 retrieving the digital signal from memory.
4. The gait waveform feature extracting method according to Claim 1, further
comprising:
 comparing said features of said one-step waveform against a second waveform stored
in memory; and
 determining that said one-step waveform matches said second waveform when said
features of said one-step waveform are within a predetermined criteria of corresponding
features of said second waveform.
5. The gait waveform feature extracting method according to Claim 4, further
comprising:
 generating a control signal; and

actuating another device once said determining step determines that the one-step waveform matches said second waveform.

6. The gait waveform feature extracting method according to Claim 5, wherein:

said actuating step includes at least one of

- actuating a visual display,
- actuating an audio alarm, and
- opening a lock.

7. The gait waveform feature extracting method according to Claim 5, wherein:

said determining step includes calculating a Mahalanobis distance from said features of said first waveform.

8. The gait waveform feature extracting method according to Claim 1, wherein:
said extracting step includes

dividing said one-step waveform by an interval so as to create divided intervals, and

extracting as the features of said one-step waveform integrated values obtained by integrating amplitude values of said divided intervals.

9. The gait waveform feature extracting method according to Claim 1, further comprising:

generating said digital signal with an electric field displacement detector.

10. The gait waveform feature extracting method according to Claim 9, wherein:
said generating step includes producing said digital signal as a wireless signal.

11. The gait waveform feature extracting method according to Claim 10, wherein:
said extracting step is performed in an analysis device that is separate from said electric field displacement detector.

12. An individual identification system comprising:

an electric field displacement detector configured to detect an electric field displacement formed on a body of a subject in accordance with a two-leg-walking movement of said subject and produce a signal that corresponds with the electric field displacement; and
a processor configured to identify from said signal an individual using, as an index, a peak amplitude of said signal, in a predetermined frequency band, that corresponds to a state where approximately a whole bottom surface of a first foot of said subject is in contact with a walking surface and a toe of a second foot is just after leaving the walking surface.

13. The individual identification system according to Claim 12, wherein
said predetermined frequency band is in an inclusive range of 6Hz through 10 Hz.

14. The individual identification system according to Claim 13, further comprising:
a memory configured to hold features of a second waveform associated with the individual, wherein
said processor is configured to
 compare said features of said one-step waveform against the second waveform stored in memory, and
 determine that said one-step waveform matches said second waveform when said features of said one-step waveform are within a predetermined criteria of corresponding features of said second waveform.

15. The individual identification system according to Claim 14, wherein:
 said electric field displacement detector is configured to generate a control signal when said processor determines that said one-step waveform matches said second waveform; and
 said processor is configured to actuate another device after receiving said control signal once said determining step determines that the one-step waveform matches said second waveform.

16. The individual identification system according to Claim 15, wherein:
 said another device being at least one of a visual display, an audio alarm mechanism, and a controllable lock.

17. The individual identification system according to Claim 14, wherein:

said processor is configured to calculate a Mahalanobis distance from said features of said first waveform.

18. The individual identification system according to Claim 15, wherein:
said electric field displacement detector includes a transmitter configured to transmit said control signal as a wireless signal.

19. The individual identification system according to Claim 14, wherein:
said electric field displacement detector is separate from said processor.

20. An individual identification system comprising:
means for detecting an electric field displacement formed on a subject in accordance with a two-leg-walking movement of said subject; and
means for comparing said electric field displacement with predetermined electric field displacements associated with different individuals so as to identify a predetermined individual based on said electric field displacement.